

10-2024

Prgrm - 4

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- 2) Develop a java program to create an abstract class named shape that contains two integers & an empty method named print Area (). Provide 3 classes named Rectangle, Circle, such that each one of the classes has only method print Area () that prints the area of given shape.

```
abstract class shape {
```

```
    protected int dimension1;
```

```
    protected int d2;
```

```
    public abstract void printArea(); }

```

```
class Rectangle extends shape {
```

```
    public Rectangle (int length, int width) {
```

```
        this.d1 = length;
```

```
        this.d2 = width;
```

```
    }

```

```
    public void printArea () {
```

```
        int area = d1 * d2;
```

```
        System.out.println ("Area of rectangle " + area);
```

```
    }

```

```

}

```

```
class Triangle extends shape {
```

```
    public Triangle (int base, int height) {
```

```
        this.d1 = base;
```

```
        this.d2 = height;
```

```
    }

```



```
public void printArea() {
```

```
double area = 0.5 * d1 * d2;
```

```
System.out.println("Area of tri" + area);
```

```
}
```

```
}
```

```
class Circle extends Shape {
```

```
public Circle(int radius) {
```

```
this.d1 = radius;
```

```
}
```

```
public void printArea() {
```

```
double Area = Math.PI * d1 * d1;
```

```
System.out.println("Area of circle" + area);
```

```
}
```

```
}
```

```
public class ShapeTest {
```

```
public static void main(String[] args) {
```

```
Shape rectangle = new Rectangle(5, 3);
```

```
rectangle.printArea();
```

```
Shape triangle = new Triangle(4, 6)
```

```
triangle.printArea();
```

```
Shape circle = new Circle(7);
```

```
circle.printArea();
```

```
}
```

```
}
```


Output :

Area of Rectangle : 15

Area of Triangle : 12

Area of circle : 153.938

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